THE JOURNAL OF GENERAL MICROBIOLOGY

EDITED FOR
THE SOCIETY FOR GENERAL MICROBIOLOGY

Editors

S. W. GLOVER
E. A. DAWES M. F. MADELIN P. M. MEADOW

Editorial Board

E. A. ASHESHOV
J. A. BAILEY
J. R. BAKER
S. BASCOMB
S. BAUMBERG
C. M. BROWN
A. T. BULL
N. G. CARR
C. E. CATEN
M. L. CHANCE
T. CROSS
K. G. H. DYKE
A. A. EDDY
C. A. FEWSON
G. W. GOODAY
T. R. G. GRAY
P. HAMBLETON
I. HANCOCK
M. S. HENDRIE
M. T. HEYDEMAN
P. J. HIGHTON
W. H. HOLMS
R. M. JACKSON
D. JONES
R. J. MANCHEE
R. MARCHANT
B. E. MOSELEY
M. O. MOSS
J. A. PATEMAN
P. PIGGOT
D. PITT
S. POSTON
C. RATLEDGE
R. C. RIGHELATO
C. F. ROBERTS
J. M. SHEWAN
I. W. SUTHERLAND
A. H. THOMAS
R. J. THRELFALL
A. P. J. TRINCI
A. C. WARDLAW
S. C. WATKINSON
P. J. WHITE
D. WILKIE
B. M. WILKINS
G. M. WILLIAMSON
K. S. ZINNEMANN

VOLUME 86, 1975

CAMBRIDGE
AT THE UNIVERSITY PRESS
1975

PUBLISHED BY THE CAMBRIDGE UNIVERSITY PRESS
Bentley House, 200 Euston Road, London NW1 2DB
American Branch: 32 East 57th Street, New York, N.Y. 10022

© Society for General Microbiology, 1975

Printed in Great Britain at the University Printing House, Cambridge

Contents

Part 1 *issued* January 1975

PAGE

Torulopsis bacarum. Torulopsis pustula and *Torulopsis multis-gemmis* sp. nov., Three New Yeasts from Soft Fruit. By R. W. M. BUHAGIAR 1

Changes in Morphology and Cell Wall Structure that Occur during Growth of *Vibrio* sp. NCTC4716 in Batch Culture. By D. A. BAKER and R. W. A. PARK . 12

Chemistry and Ultrastructure of the Hyphal Walls of *Pythium acanthicum*. By J. H. SIETSMA, J. J. CHILD, L. R. NESBITT and R. H. HASKINS 29

Ammonia Assimilation by Rhizobium Cultures and Bacteroids. By C. M. BROWN and M. J. DILWORTH 39

Oligomeric Structure of Cholera Toxin: Characteristics of the H and L Subunits. By J. HOLMGREN and I. LÖNNROTH 49

Sub-cellular Location of Mercury in Yeast Grown in the Presence of Mercuric Chloride. By A. D. MURRAY and D. K. KIDBY 66

Glucose Repression of Enterotoxins A, B and C and Other Extracellular Proteins in Staphylococci in Batch and Continuous Culture. By A. W. JARVIS, R. C. LAWRENCE and G. G. PRITCHARD 75

R. Factors from *Serratia marcescens*. By R. W. HEDGES, V. RODRIGUEZ-LEMOINE and N. DATTA. 88

A Maximal Predictive Classification of Klebsielleae and of the Yeasts. By J. A. BARNETT, S. BASCOMB and J. C. GOWER 93

Biosynthesis of Lysine in *Rhodotorula glutinis*: Role of Pipecolic Acid. By M. KURTZ and J. K. BHATTACHARJEE. 103

Thermosensitive Production of Their Transfer Systems by Groups S Plasmids. By V. RODRIGUEZ-LEMOINE, A. E. JACOB, R. W. HEDGES and N. DATTA . . . 111

Isolation and Chemical Characterization of Plasma Membranes from the Yeast and Mycelial Forms of *Candida albicans*. By M. S. MARRIOTT 115

Chromosome Transfer in *Proteus mirabilis* Mediated by a Hybrid Plasmid. By J. N. COETZEE 133

The Effect of Coenzyme Leakage and Replacement on the Growth and Metabolism of Two Fusobacteria. By R. S. COLES, JUN. 147

Extremely Thermophilic Acidophilic Bacteria Convergent with *Sulfolobus acidocaldarius*. By M. DE ROSA, A. GAMBACORTA and J. D. BU'LOCK 156

Ultrastructure of an Extremely Thermophilic Acidophilic Micro-organism. By G. MILLONIG, M. DE ROSA, A. GAMBACORTA and J. D. BU'LOCK 165

PAGE

Mutations which Affect Amino Acid Transport in *Aspergillus nidulans*. By J. R. KINGHORN and J. A. PATEMAN 174

SHORT COMMUNICATIONS

The Rapid Serological Diagnosis of Fish Furunculosis Caused by 'Smooth' and 'Rough' Strains of *Aeromonas salmonicida*. By D. H. MCCARTHY and C. T. RAWLE 185

Extrusion of Sex Pili by Rapidly Washed R+ *Escherichia coli*. By A. M. LAWN and E. MEYNELL 188

Phospholipids of *Escherichia coli* in Magnesium Deficiency. By T. GÜNTHER, L. RICHTER and J. SCHMALBECK 191

Stimulation of the Differential Rate of Exoenzyme Formation in *Bacillus amyloliquefaciens* by Streptolydigin, an inhibitor of RNA Chain Elongation. By G. COLEMAN and D. A. STORMONTH 194

Regulation of 2-Phosphoenolpyruvate Carboxykinase and Isocitrate Lyase Syntheses in *Neurospora crassa*. By R. E. BEEVER 197

Part 2 *issued* February 1975

Sphere–Rod Morphogenesis of *Escherichia coli*. By E. W. GOODELL and U. SCHWARZ 201

Enzyme Electrophoretograms in the Analysis of Taxon Relatedness of *Micrococcus cryophilus*, *Branhamella catarrhalis* and Atypical Neisserias. By R. H. FOX and D. E. MCCLAIN 210

Characterization of the Growth of *Pseudomonas putida* LP on Lipoate and its Analogues: Transport, Oxidation, Sulphur Source, and Enzyme Induction. By J. C. H. SHIH, M. L. ROZO, L. D. WRIGHT and D. B. MCCORMICK . . . 217

An Attempt to Identify the Intestinal Receptor for the K88 Adhesin by Means of a Haemagglutination Inhibition Test Using Glycoproteins and Fractions from Sow Colostrum. By R. A. GIBBONS, G. W. JONES and R. SELLWOOD . . 228

Microbial Water Relations. Effects of Solute Concentration on the Respiratory Activity of Sugar-tolerant and Non-tolerant Yeasts. By A. D. BROWN . . 241

Isolation of Lipopolysaccharide from the Walls of *Micropolyspora faeni*: Chemical Composition and Serological Reactivity. By M. R. HOLLINGDALE . . . 250

The Basis of the Alkalophilic Property of a Species of Bacillus. By K. OHTA, A. KIYOMIYA, N. KOYAMA and Y. NOSOH 259

Physiological Studies on the Pneumococcal Forssman Antigen: a Choline-containing Lipoteichoic Acid. By E. B. BRILES and A. TOMASZ 267

Polarity of the *cysJIH* Operon of *Salmonella typhimurium*. By R. E. LOUGHLIN . 275

PAGE

The Inheritance of Penicillin Titre in Wild-type Isolates of *Aspergillus nidulans*. By M. J. MERRICK and C. E. CATEN 283

The Structural Gene for NADP L-Glutamate Dehydrogenase in *Aspergillus nidulans*. By J. R. KINGHORN and J. A. PATEMAN 294

The Effect of Cytochalasin B on Hyphal Morphogenesis in *Polyporus biennis*. By A. M PATTON and R. MARCHANT 301

Attempts to Induce Tumours with Nucleic Acid Preparations from *Agrobacterium tumefaciens*. By R. PHILLIPS and D. N. BUTCHER 311

Studies on the Physiological Significance of the Lack of a Pyruvate Dehydrogenase Complex in *Hyphomicrobium* sp. By W. HARDER, A. MATIN and M. M. ATTWOOD 319

Enniatin Production by *Fusarium sambucinum*: Primary, Secondary, and Unitary Metabolism. By T. K. AUDHYA and D. W. RUSSELL 327

Studies on the Vitamin Nutrition of the Cellular Slime Mould *Dictyostelium discoideum*. By D. J. WATTS and J. R. GUEST 333

Involvement of a Recombination Repair Function in Disciplined Cell Division of *Micrococcus radiodurans*. By B. E. B. MOSELEY and H. J. R. COPLAND . . 343

SHORT COMMUNICATIONS

Enhancement of Growth of *Leptospira icterohaemorrhagiae* by Tissue Cell Cultures. By I. LINDENBAUM, E. EYLAN and E. RAANANI 358

The Effect of Colicin E2 on the Flagellate *Euglena gracilis*. By J. ŠMARDA, L. EBRINGER and J. MACH 363

The Compatibility of Hly Factor, a Transmissible Element which Controls α-Haemolysin Production in *Escherichia coli*. By C. MONTI-BRAGADIN, L. SAMER, G. D. ROTTINI and B. PANI 367

Control of Dimorphism in *Candida albicans* by Zinc: Effect on Cell Morphology and Composition. By H. YAMAGUCHI 370